PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
GEORGE T. MARCOU
KILPATRICK STOCKTON LLP
607 FOURTEENTH STREET, N.W.
SUITE 900
WASHINGTON, DC 20005

PCT

NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing (*day/month/year*) 10 JAN 2005

Applicant's or agent's file reference
SAIC0067-PCT

IMPORTANT NOTIFICATION

International application No.	International filing date (*day/month/year*)	Priority date (*day/month/year*)
PCT/US03/21691	11 July 2003 (11.07.2003)	30 September 2002 (30.09.2002)

Applicant

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.

2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.

3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US	Authorized officer
Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Kwang B. Yao Telephone No. 571-272-2600

Form PCT/IPEA/416 (July 1992)

Atty: GTM
Docket/Matter No.: SAIC0067-PCT U.S.
Action: IDS - US
Due: 4/10/05
C/U: 3/10; 4/13/05

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference SAIC0067-PCT	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US03/21691	International filing date *(day/month/year)* 11 July 2003 (11.07.2003)	Priority date *(day/month/year)* 30 September 2002 (30.09.2002)
International Patent Classification (IPC) or national classification and IPC IPC(7): H04Q 7/00 and US Cl.: 370/328		
Applicant SCIENCE APPLICATIONS INTERNATIONAL CORPORATION		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of ___ sheets.

3. This report contains indications relating to the following items:

   I ☒ Basis of the report

   II ☐ Priority

   III ☐ Non-establishment of report with regard to novelty, inventive step and industrial applicability

   IV ☐ Lack of unity of invention

   V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   VI ☐ Certain documents cited

   VII ☐ Certain defects in the international application

   VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
13 February 2004 (13.02.2004)	14 December 2004 (14.12.2004)
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Kwang B. Yao Telephone No. 571-272-2600

Form PCT/IPEA/409 (cover sheet)(July 1998)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US03/21691

I. Basis of the report

1. With regard to the **elements** of the international application:*

☒ the international application as originally filed.

☒ the description:
pages 1-26 as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.

☒ the claims:
pages 27-34, as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.

☒ the drawings:
pages 1-11, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.

☐ the sequence listing part of the description:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination(under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

☒ the description, pages NONE

☒ the claims, Nos. NONE

☒ the drawings, sheets/fig NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

** Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*
*** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US03/21691

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims	8-11, 22, 27-32	YES
	Claims	1-7, 21, 23-26	NO
Inventive Step (IS)	Claims	8, 22, 27-29	YES
	Claims	1-7, 9-11, 21, 23-26, 30-32	NO
Industrial Applicability (IA)	Claims	1-11, 21-32	YES
	Claims	NONE	NO

2. CITATIONS AND EXPLANATIONS
Please See Continuation Sheet

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US03/21691

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Claims 1-7, 21, 23-26 lack novelty under PCT Article 33(2) as being anticipated by Cook et al. (US 6,052,558).

Cook et al. discloses a networked repeater comprising the following features: as depicted in Figs. 1, 2, 3, 4, 5, at least one designated area; one base station (22) associated with each of the at least one designated area, wherein the base station (22) provides wireless communication to a plurality of user equipments UEs (24) wishing to access the network by transmitting downlink signals to the UEs (24); and a repeater (50) associated with the base station (22), wherein the repeater (50) captures the downlink signals sent by the base station (22) to the UEs (24), wherein the repeater (50) is capable of discriminately selecting one of the captured downlink signals sent to a selected one of the UEs (24) and amplifying (92, 116) and transmitting the selected downlink signal; regarding claim 2, wherein the repeater (50) transmits the amplified selected signals in-band to the selected UE; regarding claim 3, wherein the selected downlink signal includes both data and control information (Fig. 6, column 9, lines 41 to column 10, line 9); regarding claim 4, wherein the repeater (50) is capable of capturing uplink signals from the UEs (24) to the base station (22), discriminately selecting one of the uplink signals, and amplifying (92, 116) and transmitting the selected uplink signal; regarding claim 5, wherein the selected uplink signal includes both data and control information (Fig. 6, column 9, lines 41 to column 10, line 9); regarding claim 6, wherein the repeater (50) is capable of capturing all uplink signals from the UEs (24) to the base station (22) and indiscriminately amplifying (92, 116) and transmitting all the uplink signals; regarding claim 7, wherein the repeater (50) is also capable of indiscriminately amplifying (92, 116) and transmitting all the downlink signals; regarding claim 21, receiving a first RF signal; processing the first RF signal to discern data channels from control channels (Fig. 6, column 9, lines 41 to column 10, line 9); selecting one of the data channels based on predetermined criteria (Fig. 6, column 9, lines 41 to column 10, line 9); amplifying (92, 116) and converting the selected data channel into a first output RF signal; and transmitting the first output RF signal in-band; regarding claim 23, wherein the first RF signal is intended for one or more subscriber units (24) in a wireless communication network; regarding claim 24, wherein the first RF signal is intended for a base station (22) in a wireless communication network; regarding claim 25, receiving a second RF signal intended for a base station (22) in the wireless communication network; processing the second RF signal to discern data channels from control channels; amplifying (92, 116) and converting all the data channels from the second RF signal into a second output RF signal; and transmitting the second out RF signal; regarding claim 26, receiving a second RF signal intended for one or more subscriber units (24) in the wireless communication network; processing the second RF signal to discern data channels from control channels (Fig. 6, column 9, lines 41 to column 10, line 9); amplifying (92, 116) and converting all the data channels from the second RF signal into a second output RF signal; and transmitting the second out RF signal. See column 2-12.

Claims 9, 10, 30, 31 lack an inventive step under PCT Article 33(3) as being obvious over Cook et al. (US 6,052,558) in view of Raleigh et al. (US 6,101,399).

Cook et al. discloses the claimed limitations above. Cook et al. does not disclose the following features: regarding claims 9, wherein the repeater comprises an equalization filter to compensate for interference caused by an existence of multiple communication paths between the repeater and the base station; regarding claim 10, wherein the equalization filter is an adaptive equalization filter; regarding claim 30, compensating for interference caused by an existence of multiple communication paths to the one or more subscriber units; regarding claim 31, compensating for interference caused by an existence of multiple communication paths to the

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

base station. Raleigh et al. discloses a communication system comprising the following features: : regarding claims 9, wherein the repeater comprises an equalization filter to compensate for interference caused by an existence of multiple communication paths between the repeater and the base station; regarding claim 10, wherein the equalization filter is an adaptive equalization filter; regarding claim 30, compensating for interference caused by an existence of multiple communication paths to the one or more subscriber units; regarding claim 31, compensating for interference caused by an existence of multiple communication paths to the base station. See column 23, lines 22-26 and 49-57. It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Cook et al., by using the features, as taught by Raleigh et al., in order to provide less interference delivered to the undesired users. See Raleigh et al., column 12, lines 13-16.

Claims 11 and 32 lack an inventive step under PCT Article 33(3) as being obvious over Cook et al. (US 6,052,558) in view of Jeon (US 6,097,928).
Cook et al. discloses the claimed limitations above. Cook et al. does not disclose the following features: regarding claim 11, wherein the repeater comprises a phase locked loop for matching a carrier frequency of the transmitted selected downlink signal with a carrier frequency of the selected downlink signal as it is originally transmitted by the base station to a tolerance acceptable to the UE; regarding claim 32, matching a carrier frequency of the first output RF signal and a carrier frequency of the first RF signal to an accepted tolerance. Jeon discloses a communication system comprising the following features: regarding claim 11, wherein the repeater comprises a phase locked loop for matching a carrier frequency of the transmitted selected downlink signal with a carrier frequency of the selected downlink signal as it is originally transmitted by the base station to a tolerance acceptable to the UE; regarding claim 32, matching a carrier frequency of the first output RF signal and a carrier frequency of the first RF signal to an accepted tolerance. See column 1, lines 23-37; column 2, lines 30-40. It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Cook et al., by using the features, as taught by Jeon, in order to provide an improvement on the efficiency of the control channels. See Jeon, column 3, lines 26-48.

Claims 8, 22, 27-29 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a communication system comprising the following features: regarding claim 8, wherein the selected UE can tolerate a predetermined time delay between the time that the selected downlink signal is transmitted by the base station and the time the selected downlink signal is amplified and transmitted by the repeater; and wherein the repeater is capable of selecting, amplifying, and transmitting the selected downlink signal within the predetermined time delay; regarding claim 22, wherein the control channels include pilot, sync, and paging channels; regarding claim 27, determining a tolerance for time delay of the transmitted RF signals; and insuring that the processing, selecting, and converting steps are within the tolerance for time delay; regarding claim 28, wherein the received RF signals are intended for a plurality of subscriber units, and the tolerance for time delay comprises an allowable time delay for one of the subscriber unit to accommodate diversity combining of data channels; regarding claim 29, wherein the insuring step includes setting a software parameter in a wireless network that includes the subscriber units for a time delay search window around one of the control channel time references.

---------- NEW CITATIONS ----------
US 6,052,558 A (COOK et al) 18 April 2000, see column 2-12.
US 6,101,399 A (RALEIGH et al) 8 August 2000, see column 23, lines 22-26, 49-57.
US 6,097,928 A (JEON) 1 August 2000, see column 1, lines 23-27; column 2, lines 33-40.